SHOT - THE FUTURE

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in association with the CMO’s NBTC
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ACKNOWLEDGEMENTS

➤ SHOT office staff
  ➤ Hilary Jones
  ➤ Aysha Boncinelli
➤ SHOT Steering Group and Working Group
➤ Participating hospitals
➤ UK Blood Services
➤ Elizabeth Love and Dorothy Stainsby
➤ Lorna Williamson
1996/97-2001/02 (n=1630)

Blood transfusion errors: biggest category reported to SHOT (64%)
INCREASES IN REPORTING YEAR BY YEAR

- **Initial reports**
- **Questionnaires**

Years:
- 1996/97
- 1997/98
- 1998/99
- 1999/00
- 2000/01 (12 mths)
- 2001/02 (15 mths)

Report counts:
- 169
- 196
- 255
- 289
- 293
- 315
- 283
- 378
- 363
- 482
- 478
SHOT RECOMMENDATIONS!
“(Hospital) Trusts involved in blood transfusion should establish a Hospital Transfusion Committee with the authority and resources to take the necessary actions to improve transfusion practice” by Dec 2002
HSC 2002/009
RECOMMENDATIONS!
“Ensure participation in the SHOT scheme and that timely reporting is in place”
Action: Chief Executives … by April 2003

To encourage active participation: SHOT recommends an open learning and improvement culture
### PARTICIPATION IN SHOT - I

<table>
<thead>
<tr>
<th>Year</th>
<th>Eligible Hospitals</th>
<th>Reporting Hospitals</th>
<th>‘NIL TO REPORT’ Hospitals</th>
<th>No. of Initial Report Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>424</td>
<td>94</td>
<td>-</td>
<td>169</td>
</tr>
<tr>
<td>Year 2</td>
<td>424</td>
<td>112</td>
<td>164</td>
<td>197</td>
</tr>
<tr>
<td>Year 3</td>
<td>432</td>
<td>132</td>
<td>204</td>
<td>252</td>
</tr>
<tr>
<td>Year 4</td>
<td>426</td>
<td>155</td>
<td>150</td>
<td>291</td>
</tr>
<tr>
<td>Year 5</td>
<td>413</td>
<td>199</td>
<td>180</td>
<td>315</td>
</tr>
<tr>
<td>Year 6</td>
<td>405</td>
<td>187</td>
<td>191</td>
<td>478*</td>
</tr>
</tbody>
</table>

* during this 15 month reporting period
## PARTICIPATION IN SHOT - II

<table>
<thead>
<tr>
<th></th>
<th>PARTICIP. DEFN 1</th>
<th>PARTICIP. DEFN. 2</th>
<th>AVG. NO. REPORTS / REPORTING HOSPITALS</th>
<th>AVG. NO. REPORTS / ALL ELIGIBLE HOSPITALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>-</td>
<td>22%</td>
<td>1.8</td>
<td>0.4</td>
</tr>
<tr>
<td>Year 2</td>
<td>65%</td>
<td>26%</td>
<td>1.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Year 3</td>
<td>78%</td>
<td>31%</td>
<td>1.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Year 4</td>
<td>72%</td>
<td>36%</td>
<td>1.9</td>
<td>0.7</td>
</tr>
<tr>
<td>Year 5</td>
<td>92%</td>
<td>48%</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Year 6</td>
<td>93%</td>
<td>46%</td>
<td>2.6</td>
<td>0.9 *</td>
</tr>
</tbody>
</table>

*This is based on an equivalent 12 month period*
to obtain accurate information on participation, from 1 January 2003:

- Data collection
  - rigid system of follow up to obtain completed questionnaires
  - confidential pin number for each hospital
  - inked to level of blood issues, blood stocks management scheme data, ?Serology NEQAS

- Participation defined to include only those hospitals which submit completed reports

- Denominator data: transfusions within and out of hours
  SWG pilot study
<table>
<thead>
<tr>
<th>Event Type</th>
<th>Number</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total components issued</td>
<td>~20 million</td>
<td></td>
</tr>
<tr>
<td>Risk of serious hazard</td>
<td>1630</td>
<td>1 in 12,000</td>
</tr>
<tr>
<td>Risk of major morbidity</td>
<td>200</td>
<td>1 in 100,000</td>
</tr>
<tr>
<td>Risk of death</td>
<td>78</td>
<td>1 in 256,000</td>
</tr>
<tr>
<td>Risk of IBCT</td>
<td>1045</td>
<td>1 in 19,000</td>
</tr>
<tr>
<td>Risk of major morbidity from IBCT</td>
<td>69</td>
<td>1 in 290,000</td>
</tr>
<tr>
<td>Risk of death from IBCT</td>
<td>15</td>
<td>1 in 1.3 million</td>
</tr>
<tr>
<td>Risk of TRALI</td>
<td>103</td>
<td>1 in 194,000</td>
</tr>
<tr>
<td>Risk of major morbidity from TRALI</td>
<td>67</td>
<td>1 in 299,000</td>
</tr>
<tr>
<td>Risk of death from TRALI</td>
<td>25</td>
<td>1 in 800,000</td>
</tr>
</tbody>
</table>
SHOT

SUSTAINED ACTIVE PARTICIPATION IN SHOT REQUIRES DEMONSTRATION OF ITS EFFECTIVENESS

• Clear decision making pathways for establishing priorities in blood safety
• A national unified body, with appropriate relevant expertise and resource, to advise government on transfusion safety, e.g. MSBT+
• SHOT data should be used to guide blood safety policy
IBCT QUESTIONNAIRE REVIEW!

- Make forms more user-friendly
- Collaborative work with NPSA
- Inland Revenue form as model
- Free text sheet on front of questionnaire for resume of event
- Start 1 January 2004

- RCA in selected cases (NPSA)
REDUCTION OF IBCT: NEW INITIATIVES

• BCSH Guidelines
  – Update of guidelines on blood administration
  – Revision of hospital computing guidelines
  – Guidelines for avoidance of transfusion mediated GVHD

• IT Working Group of CMO’s NBTC
  – Remit: improvement of the safety and effectiveness of transfusion through the use of IT
  – Collates information on IT field projects
  – Design Authority specification for the National Programme for IT

• NO blood transfusion representation
SUSTAINED ACTIVE PARTICIPATION IN SHOT REQUIRES DEMONSTRATION OF ITS EFFECTIVENESS

• Clear decision making pathways for establishing priorities in blood safety
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“NEAR MISS” EVENTS

- More numerous than “wrong blood” transfusions
- Show
  - that systems are capable of picking up errors
  - where systems are flawed so that they can be redesigned to minimize human error
- Major source of information to evaluate changes to improve transfusion safety
- Only 709 reports from 41% of eligible hospitals
- We are losing opportunities to learn from each other
- “Near-miss” reporting = learning and improvement culture
Air Safety Reports: Volume & Risk

- **Total**
- **% High Risk**

Year


Volume:
- 1994: 8000
- 1995: 7000
- 1996: 6000
- 1997: 5000
- 1998: 4000
- 1999: 3000

% High Risk:
- 1994: 3.0%
- 1995: 2.5%
- 1996: 2.0%
- 1997: 1.5%
- 1998: 1.0%
- 1999: 0.5%
- 1994: 0.0%
To enable full investigation of ATR and TRALI

- Early evaluation by consultant(s) at hospital
- SHOT specialist panel (haematologist, immunologist and anaesthetist/intensivist) to review all cases
- Open, non-anonymised reporting
  NB some cases where FFP used inappropriately
TRALI PREVENTION - OPTIONS

- FFP from untransfused male donors
- Platelets - suspension in ‘male plasma’, screening female apheresis donors, platelet additive solutions
- CMO’s NBTC’s recommendations on FFP
  - single unit, virally inactivated (MB), non-UK untransfused males if born after 1 January 1996
  - pooled virally inactivated plasma from populations at low risk of SE
  - use untreated single donor/UK sourced products if
    a) cannot meet demand (main consideration) or
    b) for older populations who receive small volumes
TRANSFUSION-TRANSMITTED INFECTIONS

- Since 1995 bacterial contamination has accounted for 26/40 (65%) of TTI incidents responsible for 6/7 deaths
- Platelets implicated in 22/26 cases, skin pathogens confirmed in 8 and likely in some others

Bacterial infection remains an avoidable cause of death and major morbidity and merits increased efforts to prevent bacterial contamination of blood components
EUROPEAN COMMISSION DIRECTIVE 2002/98/EC

• “...Adverse reactions and events related to collection, testing, processing, storage and distribution of blood and blood components”
• Does not include “wrong blood” reporting but only minimum standard for adverse event reporting
• Comes into force 8 February 2005 - UK Law
• SHOT/EHN meeting February 2005
SHOT AS A MODEL FOR

- Tissues
- Stem Cells
- Bone Marrow Transplants
POINTS FOR DISCUSSION

• Implementation of SHOT recommendations
• Implementation of HSC 2002/009
• Open, non-anonymised reporting
  – for immunological complications
  – for IBCT?
• Investigation and prevention of TRALI
• Fresh Frozen Plasma and Risks
• A national unified body to advise government on priorities for improvements in transfusion safety